



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2021-0460; Project Identifier MCAI-2020-01620-R; Amendment 39-21744; AD 2021-20-06]

RIN 2120-AA64

Airworthiness Directives; Airbus Helicopters

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for Airbus Helicopters Model AS355E, AS355F, AS355F1, and AS355F2 helicopters. This AD was prompted by multiple fatigue cracks in power turbine (PT) 3rd stage wheels. This AD requires revising the existing Rotorcraft Flight Manual (RFM) for your helicopter and installing a placard. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain documents listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: For Airbus Helicopters service information identified in this final rule, contact Airbus Helicopters, 2701 North Forum Drive, Grand Prairie, TX 75052; telephone (972) 641-0000 or (800) 232-0323; fax (972) 641-3775; or at <https://www.airbus.com/helicopters/services/technical-support.html>. For Rolls-Royce service information identified in this final rule, contact Rolls-Royce Corporation, 450 South Meridian Street, Mail Code NB-01-06, Indianapolis, IN 46225; telephone (317) 230-1667; email: CMSEindyOSD@rolls-royce.com; or at <https://www.rolls-royce.com>. You may view the referenced service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Room 6N-321, Fort

Worth, TX 76177. For information on the availability of this material at the FAA, call (817) 222-5110. Service information that is incorporated by reference is also available at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0460.

Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0460; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the European Union Aviation Safety Agency (EASA) AD, any comments received, and other information. The street address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Michael Hughlett, Aerospace Engineer, General Aviation & Rotorcraft Section, International Validation Branch, FAA, 10101 Hillwood Pkwy., Fort Worth, TX 76177; telephone (817) 222-5110; email michael.hughlett@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to Airbus Helicopters Model AS355E, AS355F, AS355F1, and AS355F2 helicopters with a Rolls-Royce Corporation (formerly Allison) engine Model 250-C20F installed. The NPRM published in the *Federal Register* on June 11, 2021 (86 FR 31194). In the NPRM, the FAA proposed to require revising the existing RFM for your helicopter to replace a note with a caution to not allow rotor speed to stagnate between 279 and 374 revolutions per minute (RPM). The NPRM also proposed to require installing a placard to avoid 71-95% N2 steady-state speed (avoid operation at 279-374 RPM). The owner/operator (pilot) may revise the existing RFM for your helicopter and the owner/operator must enter compliance with the applicable paragraphs of the AD into the aircraft records in accordance with 14 CFR 43.9(a)(1) through (4) and 14 CFR 91.417(a)(2)(v). This is an exception to the FAA's standard maintenance regulations.

The NPRM was prompted by EASA AD 2020-0266, dated December 8, 2020 (EASA AD 2020-0266), issued by EASA, which is the Technical Agent for the Member States of the European Union, to correct an unsafe condition for Airbus Helicopters (AH), formerly Eurocopter, Eurocopter France, Aerospatiale Model AS 355 E, AS 355 F, AS 355 F1, and AS 355 F2 helicopters, all serial numbers, if equipped with Rolls-Royce Corporation (formerly Allison) (RRC) engine Model 250-C20F. EASA advises of multiple fatigue cracks in PT 3rd stage wheels. Investigation has revealed that crack initiation at the hub trailing edge could occur in low-cycle fatigue and progress in high-cycle fatigue up to separation of the blade. According to EASA, RRC has determined that detrimental vibrations could occur within a particular range of turbine speeds, below the normal operating range of this helicopter, which are a potential contributing factor to these failures. This condition, if not addressed, could result in fatigue failure of a PT 3rd stage wheel, and subsequent loss of engine power, release of debris and damage to the helicopter, and loss of control of the helicopter.

Accordingly, EASA AD 2020-0266 requires revising the Normal Procedures Section of the applicable RFM or RFM supplement, informing flight crews, and installing a placard in full view of both pilots.

Discussion of Final Airworthiness Directive

Comments

The FAA received comments from one commenter, Airbus Helicopters, who asked why the Special Flight Permits paragraph specifies a different Nr range (71 – 88%) from the avoidance rate of 71 – 95% described in a previous paragraph. The FAA has determined that the difference was in error and has corrected the avoidance rate in the Special Flights Permits paragraph of this AD. The correct avoidance rate is between 71 – 95% N2.

Conclusion

These helicopters have been approved by EASA and are approved for operation in the United States. Pursuant to the FAA's bilateral agreement with the European Union, EASA has notified the FAA about the unsafe condition described in its AD. The FAA reviewed the relevant data, considered the comments received, and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these helicopters. Except for the correction to the avoidance rate specified in the Special Flight Permits paragraph, this AD is adopted as proposed in the NPRM. This change will not increase the economic burden on any operator.

Related Service Information Under 1 CFR Part 51

The FAA reviewed Airbus Helicopters Alert Service Bulletin No. AS355-71.00.21, Revision 1, dated November 10, 2020. This service information specifies replacing a note with a caution in the Flight Manual to not allow rotor speed to stagnate between 279 and 374 RPM during engine acceleration. This service information also specifies procedures for making and installing a label (placard) for the pilot and co-pilot to avoid 71-95% N2 steady-state speed (avoid operation at 279-374 RPM).

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Other Related Service Information

The FAA also reviewed Rolls-Royce Alert Commercial Engine Bulletin A-1400,

Revision 7, dated January 10, 2019. This service information specifies the speed avoidance range and operating procedures depending on the PT wheel part number installed.

Differences Between this AD and the EASA AD

EASA AD 2020-0266 requires compliance within 50 flight hours or 30 days, whichever occurs first after the effective date of its AD, whereas this AD requires compliance within 50 hours time-in-service after the effective date of this AD instead.

Costs of Compliance

The FAA estimates that this AD affects 29 helicopters of U.S. Registry. Labor rates are estimated at \$85 per work-hour. Based on these numbers, the FAA estimates the following costs to comply with this AD.

Revising the existing RFM for your helicopter will take about 0.25 work-hour for an estimated cost of \$21 per helicopter and \$609 for the U.S. fleet. Installing a placard will take about 0.25 work-hour and parts cost are a nominal amount, for an estimated cost of \$21 per helicopter and \$609 for the U.S. fleet.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on helicopters identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the

national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

(1) Is not a “significant regulatory action” under Executive Order 12866,

(2) Will not affect intrastate aviation in Alaska, and

(3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

2021-20-06 Airbus Helicopters: Amendment 39-21744; Docket No. FAA-2021-0460; Project Identifier MCAI-2020-01620-R.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to Airbus Helicopters Model AS355E, AS355F, AS355F1, and AS355F2 helicopters, certificated in any category, with a Rolls-Royce Corporation (formerly Allison) engine Model 250-C20F installed.

(d) Subject

Joint Aircraft Service Component (JASC) Code: 7250, Turbine section.

(e) Unsafe Condition

This AD was prompted by multiple fatigue cracks in power turbine (PT) 3rd stage wheels. The FAA is issuing this AD to prevent fatigue failure of a PT 3rd stage wheel. The unsafe condition, if not addressed, could result in loss of engine power, release of debris and damage to the helicopter, and loss of control of the helicopter.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

Within 50 hours time-in-service after the effective date of this AD:

(1) Revise the existing Rotorcraft Flight Manual (RFM) for your helicopter by inserting the page applicable to your helicopter model and version from Appendix 4.A. through D., of Airbus Helicopters Alert Service Bulletin No. AS355-71.00.21, Revision 1, dated November 10, 2020 (ASB AS355-71.00.21 Rev 1). Inserting a different document with information identical to that in Appendix 4.A. through D., of ASB AS355-71.00.21 Rev 1, as applicable to your helicopter model and version, is acceptable for compliance with the requirement of this paragraph. The action required by this paragraph may be performed by the owner/operator (pilot) holding at least a private pilot certificate and must be entered into the aircraft records showing compliance with this AD in accordance with § 43.9(a)(1) through (4) and § 91.417(a)(2)(v). The record must be maintained as required by § 91.417, § 121.380, or § 135.439.

(2) Install a placard in full view of the pilot and co-pilot by following the Accomplishment Instructions, paragraph 3.B., of ASB AS355-71.00.21 Rev 1.

Note 1 to paragraph (g)(2): Airbus Helicopters service information refers to a placard as a label.

(h) Special Flight Permits

Special flight permits are permitted so long as continuous engine operation between 71 and 95% N2 is avoided.

(i) Alternative Methods of Compliance (AMOCs)

(1) The Manager, International Validation Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19.

In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the International Validation Branch, send it to the attention of the person identified in paragraph (j)(1) of this AD. Information may be emailed to: 9-AVS-AIR-730-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(j) Related Information

(1) For more information about this AD, contact Michael Hughlett, Aerospace Engineer, General Aviation & Rotorcraft Section, International Validation Branch, FAA, 10101 Hillwood Pkwy., Fort Worth, TX 76177; telephone (817) 222-5110; email michael.hughlett@faa.gov.

(2) The subject of this AD is addressed in European Union Aviation Safety Agency (EASA) AD 2020-0266, dated December 8, 2020. You may view the EASA AD on the internet at <https://www.regulations.gov> in Docket No. FAA-2021-0460.

(k) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Airbus Helicopters Alert Service Bulletin No. AS355-71.00.21, Revision 1, dated November 10, 2020.

(ii) [Reserved]

(3) For service information identified in this AD, contact Airbus Helicopters, 2701 North Forum Drive, Grand Prairie, TX 75052; telephone (972) 641-0000 or (800) 232-0323; fax (972) 641-3775; or at <https://www.airbus.com/helicopters/services/technical-support.html>.

(4) You may view this service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Room 6N-321, Fort Worth, TX 76177. For information on the availability of this material at the FAA, call (817) 222-5110.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email: fr.inspection@nara.gov, or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on September 15, 2021.

Ross Landes, Deputy Director for Regulatory Operations,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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